

2 Sheets--Sheet 1.

P. W. NOLAN.
Folding-Chairs.

No 141,456.

Patented August 5, 1873.

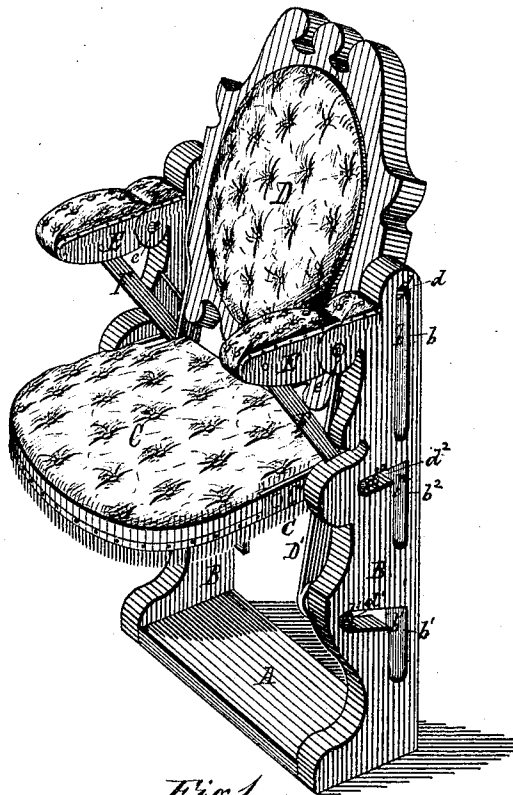


Fig 1.

Witnesses.

Harry King
Alfred Mahon

Inventor.

Patrick W. Nolan
by *Wm. Smith*
attorney

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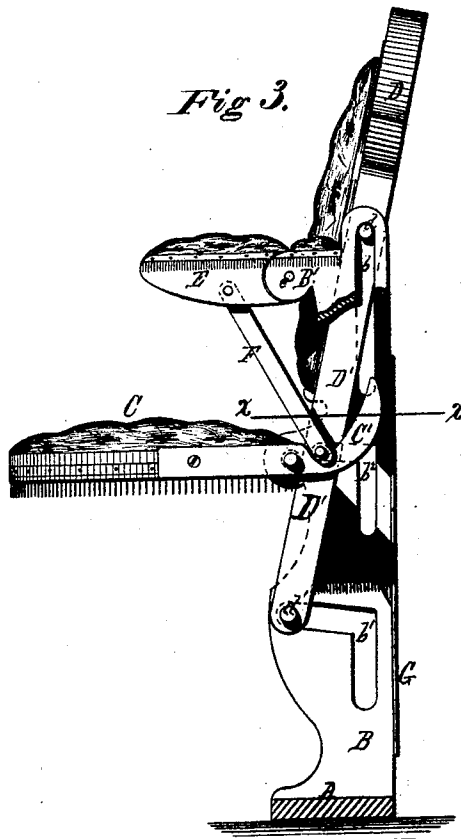
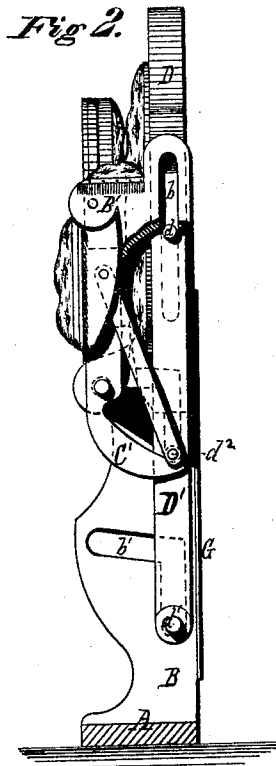
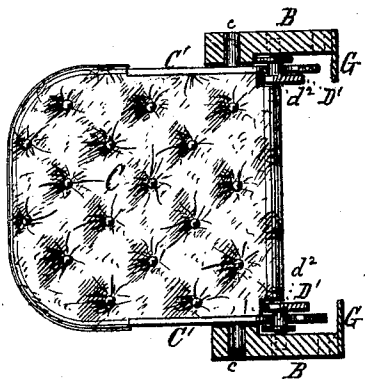


Fig 4.



Witnesses.

Harry King.
Alfred Mahon

Inventor.

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UNITED STATES PATENT OFFICE.

PATRICK W. NOLAN, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS
RIGHT TO J. H. CAMPBELL, OF WILLIMANTIC, CONNECTICUT.

IMPROVEMENT IN FOLDING CHAIRS.

Specification forming part of Letters Patent No. **141,456**, dated August 5, 1873; application filed
April 8, 1873.

To all whom it may concern:

Be it known that I, PATRICK W. NOLAN, of the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Folding Chairs for Opera-Houses, Public Halls, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved chair. Fig. 2 is a side elevation of the same, partly in section, showing the seat folded. Fig. 3 is a similar view with the chair opened or in position for use; and Fig. 4 is a horizontal section taken through the line *x x*, Fig. 3.

Similar letters of reference denote corresponding parts in all the figures.

My invention relates to a novel construction of folding chairs adapted for use in opera-houses, concert and other public halls, where it is desirable to economize space, accommodate the largest possible number of seats, and at the same time to facilitate ingress and egress between the rows of seats. Numerous efforts have been made to attain these ends, but so far as I am informed these efforts have only been partially successful owing to the difficulty of constructing a folding seat which could be brought within the required limits when folded, and at the same time could be made to answer the imperative demand for ease and comfort when in use. Thus, for the comfort of the occupant it is essential that the back of the chair, when in use, shall be inclined, and this construction caused the back to overhang, in part, the space in rear and between the seat to which such inclined back was applied and that immediately behind it. Again, the ease and comfort of the occupant demanded that the seat should be provided with arms, and these, when the seat is folded, overhang the space in front, and a row of chairs thus formed necessarily tended to obstruct the passage between them and the adjacent rows, both in front and rear, and the result has been either the employment of chairs uncomfortable to the occupant or the sacrifice of valuable space in the effort to secure comfortable seats. The object of my invention is to overcome the difficulties recited;

and to this end my invention consists in a novel construction of a chair whereby, when in use, it is provided with an inclined back, which, when the chair is folded, is made to assume a vertical position; and also with arms, which, when the chair is folded, are also folded out of the way, and both of which, when both are used, are firmly locked in the desired position of comfort for the occupant whenever the seat is occupied, thus giving the elements enumerated as essential to comfort in use, and bringing it within the smallest possible limits when folded for permitting ingress and egress between the rows.

The particular construction and arrangement of parts by which the above-named objects are attained will be best understood from the following description with reference to the drawings, in which—

A represents a base plate or board of a length corresponding to the width of the seat, and of a width from front to rear about equal, more or less, to the combined thickness of the seat and back when folded into the vertical position shown in Fig. 2. This plate is intended to be secured to the floor of the hall in any usual or convenient manner. Uprights or frame-pieces B are secured to this base-plate, one at each end, of a width from front to rear about equal to the width of the base-plate A, and of any desired ornamental outline or configuration, and between these the seat C is pivoted in bearings *c c*. D is the back, also pivoted in uprights B by pins or pivots *d*, which are free to slide up and down in vertical slots *b* formed in said uprights B. The vertical sides of the back D have metallic straps or arms D' secured to them, which extend downward, and are provided with lateral horizontal spurs or pins *d'*, which project outwardly and enter angular slots *b'* near the lower ends of standards B. The standards B are provided at or near their upper ends with ears B', to which arms E are connected by horizontal pivots at *e*. F F are pivoted links or braces inclining downward and backward from the pivoted arms, and connected with the arms or straps D' by pins or spurs *d''* formed upon or attached to the latter, and projecting outward, if desired, for the purpose of increasing the strength of the chair, into and working

in angular slots b^2 similar in form to slots b^1 . The spurs or pivots d^2 , by preference, are armed with hubs or friction-rollers, located between the strap or arm D' and link or brace F , as shown in Fig. 4. The seat C is also provided with side straps or arms C' , which project in rear of the pivots c , passing underneath the pins d^2 , and bent or curved upward into an angular, curved, or hook form, as represented, for a purpose hereinafter explained. The rear faces of the standards B are provided with shields or guards G , which cover and protect the curved projecting ends of straps C' .

The operation of the several parts above described is as follows, viz: Supposing the parts to be in position (represented in Figs. 1 and 3) for use, and it is desired to fold the chair, all that is necessary is to simply seize the top of the back, draw or thrust it forward, causing it to turn upon its pivot d until it assumes a vertical position, the pin d^1 moving backward through the horizontal or slightly-inclined portion of slot b^1 , until it comes to the vertical portion of said slot, and is directly underneath pin or pivot d , when, by its own weight or by pressing down upon it, the back is forced downward, the pins d d^1 descending through the slots b b^1 , and the pins d^2 , acting upon the arm-links F and also upon the projecting seat-straps C' , cause the arms to fold downward and the seat upward, until the several parts assume the position shown in Fig. 2. In reversing the action, by simply turning the seat outward and downward the straps C' are made to lift the spurs or pins d^2 , and, with them, the back and arms, until the pins or spurs d^1 reach the horizontal or inclined portion of the angular slot b^1 , when, further upward movement being prevented, the form of the hook-straps C' is such as to draw the pins d^2 , and, with them, the foot of straps D' and pins d^1 , forward through such horizontal portion of the slot, and by the same movement lifting the pivoted arms E into horizontal position through the links F .

By the construction and arrangement shown and described it will be seen that, when in use, the parts are all made to assume the position most favorable to the comfort and requirements of the user; and that, when folded, the seat, arms, and back are withdrawn and folded compactly together within a compass from front to rear about equal to the combined thickness of the back and seat only, leaving no overhanging or inclined portions to obstruct the space between the rows of seats. When the seat is occupied the relation of the curved or angular seat straps or hooks C' to the pins or spurs d^2 , to which the back straps and links F are connected, is such as to effectually lock the back and arms in the required position, and to release them for folding only when the seat is vacated, as will be readily understood.

It will be apparent that various modifications

in the construction of the several parts may be made without departing from the spirit of my invention. Thus, the base-plate may be extended and made to support several pairs of seat/standards; or said standards may be secured directly to the floor, if desired; and when thus placed in rows the adjacent sides of adjoining seats and backs may be connected with a single intervening standard of slightly-increased thickness to accommodate the independent pivots. The form of the seat and back and of their side straps or arms may be varied as taste or comfort may dictate, and both may be cushioned in any desired manner. The outer seat-standard of a row of seats may be faced or covered with any suitable material, and made in any desired style of ornamentation. The form of the seat straps or hooks may be varied; and the guards or shields G covering such arms may be extended across from one upright to the other, or made angular, so as to cover the inner sides or faces of the sliding arms D' . The form, also, of the angular slots may be varied, and the pins or spurs traversing said slots may be armed with friction-rollers for facilitating their movements. These, however, are only obvious modifications, such as would naturally occur to the skilled workman in carrying out my invention, and need not, therefore, be more particularly described. It will also be apparent that seats constructed as described may be folded and packed for transportation within comparatively small compass, thereby enabling them to be readily shipped from one point to another at greatly reduced cost.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The pivoted sliding back D , in combination with the slotted upright side standards B , substantially as and for the purpose described.
2. The folding seat, provided with angular or curved straps, in combination with the sliding pivoted back, substantially as described.
3. The folding arms, in combination with the pivoted sliding back, substantially as described.
4. The combination of the pivoted seat C , folding arms E , and pivoted sliding back D , substantially as and for the purpose described.
5. The standards or uprights B , provided with the vertical and angular slots b b^1 , in combination with the folding seat C and pivoted back D , substantially as and for the purpose described.
6. The shields or guards G , in combination with the standards B , for covering the projecting curved or angular ends of the seat-straps C' , as described.

PATRICK W. NOLAN.

Witnesses:

JOHN T. TITUS,
NOAH TUGWELL.